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MLSE DECODING OF PRS TYPE INTER-BIN
INTERFERENCE IN RECEIVER-END WINDOWED DMT SYSTEM

ABSTRACT OF THE DISCLOSURE

A1
An improved method of decoding the Partial-Response Signaling type inter-bin distortion in receiver-end windowed DMT system is disclosed. The method exploits the Maximum Likelihood Sequence Estimation, which yields certain improvements over the conventional DFE-type decoding of PRS signals. Simulation results are shown for the case wherein AWGN is substantially the only impairment. Since in this case the noise samples at the neighboring frequency bin outputs bear correlation of the same type as the correlation introduced among data symbol samples, a trellis imbedded noise prediction/cancellation approach has been devised. It has been shown that performance degradation can be reduced from almost 8 dB to just 1 dB, compared to performance figures with no windowing. Possible applications of this method are for xDSL and wireless OFDM systems.